

Remarks

In view of the above amendments and the following remarks, reconsideration of the rejections and further examination are requested.

Claims 1, 2, 4-8, 10 and 11 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Osada (US 6,477,127) in view of Hurtado (US 2003/0105718) and Benaloh (US 6,886,098). Claims 3, 9 and 12 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Osada in view of Hurtado and Benaloh and further in view of Quinnett (US 6,615,160). Claim 13 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Osada in view of Hurtado and Benaloh and further in view of Shear (US 2001/0042043).

Claims 1, 4-7 and 10 have been amended so as to further distinguish the present invention from the references relied upon in the rejections. As a result, the above-mentioned rejections are submitted to be inapplicable to the claims for the following reasons.

Claim 1 is patentable over the combination of Osada, Hurtado and Benaloh, since claim 1 recites a recording apparatus including, in part:

an encrypting unit operable to encrypt digital content, using a second content key that is to be encrypted using a unique key which is unique to an industrial reproduction apparatus when an optical disk is for industrial use, and using a first content key that is to be encrypted using a non-unique key which is not unique to a consumer reproduction apparatus when the optical disk is for consumer use;

a first writing unit operable to, when the optical disk is for consumer use, (a) generate, on the optical disk, a first area that is arranged to be accessed by the consumer reproduction apparatus, and (b) write the encrypted digital content to the first area; and

a second writing unit operable to, when the optical disk is for industrial use, (a) generate, on the optical disk, the first area and a second area that is arranged to be accessed by the industrial reproduction apparatus, (b) write the encrypted digital content to the second area, and (c) write message data to the first area, wherein the message data includes information which is reproduced by the consumer reproduction apparatus such that the consumer reproduction apparatus informs a user of the consumer reproduction apparatus that the digital content cannot be reproduced by the consumer reproduction apparatus.

Conventionally, when producing an optical disk for industrial use, only the second area for industrial use is generated on the optical disk and content is written to the second area. In

this case, to prevent the content from being reproduced by a consumer reproduction apparatus, the content is encrypted using a key unique to an industrial reproduction apparatus prior to being written to the second area. Thus, according to the conventional technique, the reproduction of the industrial-use content by a consumer reproduction apparatus is prevented due to the encryption of the content using the key unique to the industrial reproduction apparatus.

The conventional technique for preventing unauthorized reproduction by a consumer reproduction apparatus can, however, lead to another type of problem. For example, in a situation where both an industrial reproduction apparatus and one or more consumer reproduction apparatuses are present (e.g., on an airplane which has the industrial reproduction apparatus for showing movies to all of the passengers and one or more passengers has a personal consumer reproduction apparatus), an optical disk for industrial use could be mistaken for an optical disk for consumer use and loaded into the consumer reproduction apparatus of the passenger. If this occurs, the content on the optical disk will not be played back for the above-discussed reasons. However, the passenger will have no way of knowing that the optical disk is for industrial use, and therefore, cannot be played on his/her consumer reproduction apparatus. As a result, the passenger may incorrectly conclude that the optical disk or the consumer reproduction apparatus is faulty.

Therefore, the present invention, as recited in claim 1, avoids such an incorrect conclusion because, when producing the optical disk for industrial use, the second writing unit generates not only the second area for industrial use, but also the first area which is accessible by the consumer reproduction apparatus. Further, the second writing unit writes message data, which is reproducible by the consumer reproduction apparatus, to the first area. This message data is information which, when reproduced, informs the user that the content recorded on the optical disk cannot be reproduced by the consumer reproduction apparatus. For example, in the embodiments described in the specification, a VOB file (message VOB 63) which, when reproduced, displays a warning message such as "this disk is for industrial use" on the screen is used as a specific example of message data. The display of the message will notify the passenger that the consumer reproduction apparatus is not able to reproduce the data on the optical disk for consumer use, and therefore, the passenger will not incorrectly conclude that the optical disk or the consumer reproduction apparatus is faulty.

It is submitted that the combination of Osada, Hurtado and Benaloh fails to disclose or suggest the second writing unit recited in claim 1.

Osada discloses an apparatus for recording information (user data A) to an optical disk 1 and, at a later time, additionally recording new information (user data B) to an area of the optical disk 1 that is subsequent to an area where the information (user data A) is recorded. In order to perform the additional recording, the apparatus locates a recording termination point E at the end of the information (user data A), places a linking start point in an appropriate CPM area on the optical disk 1, and then records the new information (user data B). As a result, the start of the new data (user data B) can be determined by detecting the linking start point. (See column 6, lines 15-44 and Figures 5 and 6).

Based on the above discussion, it is apparent that Osada discloses a technique of placing a linking point in a CPM area on an optical disk. In other words, Osada, at the time of recording, writes user data in an area subsequent to the CPM area in which the linking point is placed. At the time of playback, the user data is read from the area subsequent to the CPM area, and treated as playback data. While Osada is similar to the present invention, as recited in claim 1, in that user data, such as content, is written to a predetermined area of an optical disk, the main feature of Osada is to use the CPM area as a linking point. Osada does not disclose or suggest the second writing unit as recited in claim 1 that, when the optical disk is for industrial use, generates not only the second area for industrial use, but also the first area for consumer use and writes the message data which, when reproduced, informs the user that the content recorded on the optical disk cannot be reproduced by a consumer reproduction apparatus, to the first area. As a result, Hurtado and/or Benaloh must disclose or suggest this feature in order for the combination of Osada, Hurtado and Benaloh to render claim 1 obvious.

Regarding Hurtado, it discloses a secure digital content electronic distribution system adapted to provide licensing authorization and control so that digital content 113 can only be unlocked by one or more authorized end-users. The control of the usage of the digital content 113 is enabled through an end-user player application 195 running on an end-user device 109. A digital code is embedded in every copy of the digital content 113 that defines an allowable number of secondary copies and playbacks, i.e., usage conditions 517. Digital watermarking technology is used to generate the digital code, so as to keep the digital code hidden from other end-user player applications 195 and to make the digital code difficult to alter. When the digital

content 113 is accessed in a compliant end-user device 109, the end-user player application 195 reads the watermark to check the user restrictions and updates the watermark as required.

The content 113 and the usage conditions 517 are transmitted to the one or more end-user devices 109 along with symmetric keys 623 for decrypting the content 113 and the usage conditions 517 in a secure container (SC) by a clearinghouse 105. The secure container is encrypted and once the end-user device 109 receives the secure container, it is decrypted by the end-user device 109 with an encryption key previously in the possession of the end-user device 109. The end-user device can then decrypt the content 113 and the usage conditions 517 using one of the symmetric keys 623.

The enforcement of the usage conditions 517 is performed by a content usage control layer 505 in the end-user device 109. After decryption of the content 113 and the usage conditions 517, the end-user device 109 marks the content 113 with a copy/play code 523 representing the usage conditions 517. Next, the player application 195 cryptographically scrambles the content 113 before storing it in the end-user device 109. The end-user player application 195 generates a scrambling key for each content item, and the key is encrypted and hidden in the end-user device 109. Then, every time the end-user device 109 accesses the content 113 for copy onto a recording medium or play, the end-user device 109 verifies the copy/play code 523 before allowing the content 113 to be descrambled and copied onto the recording medium or played. The end-user device 109 also updates the copy/play code in the original copy of the content 113 and on any new secondary copy. (See page 6, paragraphs [0158] and [0159]; page 14, paragraphs [0246] – [0248]; and page 17, paragraphs [0304] – [0310]).

Based on the above discussion, it is apparent that Hurtado discloses a technique of securely decrypting part of the previously encrypted content. Specifically, an end user system receives a secure container from a clearing house, and decrypts the secure container using an encrypting key provided to the end user system, thereby extracting a decrypting key from the container. The end user system then decrypts at least a part of the previously encrypt content. Hurtado is similar to the present invention, as recited in claim 1, in that content is protected by means of encryption. However, there is no disclosure or suggestion in Hurtado of the second writing unit that, when the optical disk is for industrial use, generates not only the second area for industrial use, but also the first area for consumer use and writes the message data which,

when reproduced, informs the user that the content recorded on the optical disk cannot be reproduced by a consumer reproduction apparatus, to the first area. The portion of Hurtado relied upon in the rejection discloses a copy protection code for urging the reproduction apparatus not to reproduce or copy content. However, the portion of Hurtado relied upon does not indicate message data which, when reproduced, informs the user that the content recorded on the optical disk cannot be reproduced by a consumer reproduction apparatus. In other words, the copy protection code of Hurtado is data that gives some type of control instruction to the reproduction apparatus, and is not data that includes a warning message directed to the user. As a result, Benaloh must disclose or suggest this feature in order for the combination of Osada, Hurtado and Benaloh to render claim 1 obvious.

Benaloh discloses a system including a number of different content players and a content provider. The content provider distributes encryption keys to the content players, and discloses a technique of assigning the encryption keys to each of the content players and controlling each content player to selectively use the encryption keys. (See column 6, line 42 – column 7, line 31).

In light of the above discussion, it is apparent that the system of Benaloh does disclose the use of encryption keys that are unique to specific content players. Therefore, this disclosure can be regarded as an encryption method for industrial use, and, in this sense, is similar to the present invention. However, the main feature of Benaloh is the idea of key assignment and management in which a set of encryption keys is assigned to each player. Benaloh does not disclose or suggest the second writing unit as recited in claim 1 that, when the optical disk is for industrial use, generates not only the second area for industrial use, but also the first area for consumer use and writes the message data which, when reproduced, informs the user that the content recorded on the optical disk cannot be reproduced by a consumer reproduction apparatus, to the first area.

In consideration of the above discussion, Osada, Hurtado and Benaloh do not, either alone or in combination, disclose or suggest the second writing unit as recited in claim 1. Therefore, one of ordinary skill in the art would not have been motivated to modify or combine the references so as to obtain the invention as recited in claim 1.

It is noted that Quinnett and Shear are relied upon in the Office Action as disclosing displaying a message on a screen in different languages by an apparatus for testing and

diagnosing faults in an engine, and a technique whereby an optical disk is afforded copy protection in different platforms (e.g., movie theater projectors or DVD players) having different security capabilities, respectively.

Regarding Quinnett, it discloses a technique for testing and diagnosing faults in an engine including an electronic control unit. A diagnostic computer is coupled to the electronic control unit, and displays engine testing and diagnostic text messages. Since the display includes a number of different language options, it can be used in a number of different countries.

Quinnett is similar to the present invention in that it provides information to the user via a display. However, the main feature of Quinnett is to display engine testing and diagnostic messages. Quinnett does not disclose or suggest the second writing unit of the present invention as recited in claim 1 that, when the optical disk is for industrial use, generates not only the second area for industrial use, but also the first area for consumer use and writes the message data which, when reproduced, informs the user that the content recorded on the optical disk cannot be reproduced by a consumer reproduction apparatus, to the first area. As a result, Quinnett also fails to disclose or suggest this feature of claim 1.

Regarding Shear, it discloses a technique whereby an optical disk can be protected in a platform having low security capabilities, as well as more strongly protected in a platform having higher security capabilities. A control object defines a plurality of rights management rules (for example, price for performance or redistribution rules). When the optical disk is loaded into the low capability platform, the control object enables only a subset of the control rules, such as copy controls or marking of played material. On the other hand, when the optical disk is loaded into the high capability platform, the control object enables all of the rules.

Shear is similar to the present invention in that different levels of content protection are provided. However, the main feature of Shear is to set different levels of content protection for different platforms. Shear does not disclose or suggest the second writing unit of the present invention as recited in claim 1 that, when the optical disk is intended for industrial use, generates not only the second area for industrial use, but also the first area for consumer use and writes the message data which, when reproduced, informs the user that the content recorded on the optical disk cannot be reproduced by a consumer reproduction apparatus, to the first area. As a result, Shear also fails to disclose or suggest this feature of claim 1.

As for claims 4, 7 and 10, they are patentable over the references relied upon in the rejections for reasons similar to those set forth above in support of claim 1. That is, claims 4, 7 and 10 recite features similar to that discussed above with regard to claim 1, which are not disclosed or suggested by the references.

Claim 5 is patentable over the combination of Osada, Hurtado and Benaloh, since claim 5 recites an optical disk for recording digital content including:

a first area which is arranged to be accessed by a consumer reproduction apparatus, and on which message data is recorded; and

a second area which is arranged to be accessed by an industrial reproduction apparatus, and on which the digital content encrypted using a content key that is to be encrypted using a unique key unique to the industrial reproduction apparatus is recorded,

wherein the message data includes information which is reproduced by the consumer reproduction apparatus such that the consumer reproduction apparatus informs a user of the consumer reproduction apparatus that the digital content cannot be reproduced by the consumer reproduction apparatus. The combination of Osada, Hurtado and Benaloh fails to disclose or suggest these features of claim 5.

As discussed above, Osada discloses the apparatus for recording the information (user data A) to the optical disk 1 and, at a later time, additionally recording the new information (user data B) to another area of the optical disk 1 that is after the area to which the information (user data A) is recorded. In other words, it is apparent that the areas of the optical disk 1 of Osada are accessed dependent on which information (user data A or user data B) is to be reproduced. On the other hand, claim 5 recites that the first area and the second area are accessed based on the type of reproduction apparatus. Further, claim 5 recites that the message data includes information which is reproduced by the consumer reproduction apparatus such that the consumer reproduction apparatus informs a user of the consumer reproduction apparatus that the digital content cannot be reproduced by the consumer reproduction apparatus. Osada fails to disclose or suggest these features of claim 5. As a result, Hurtado and/or Benaloh must disclose or suggest these features in order for the combination to render claim 5 obvious.

As for Hurtado, it discloses encrypting the content 113 and storing the encrypted content 113 with symmetric keys 623 in the secure container, which, in turn, is also encrypted, and encrypting the received content 113 with the scrambling key, which itself is also encrypted, and

storing the encrypted content 113 and scrambling key in the end-user device 109. However, Hurtado fails to disclose or suggest the first and second areas of the optical disk, as well as the message data, as recited in claim 5.

As for Benaloh, it discloses a system including a number of different content players and a content provider. The content provider distributes encryption keys to the content players, and discloses a technique of assigning the encryption keys to each of the content players and controlling each content player to selectively use the encryption keys. However, Benaloh also fails to disclose or suggest the first and second areas of the optical disk and the message data as recited in claim 5. As a result, the combination of Osada, Hurtado and Benaloh fails to render claim 5 obvious.

It is also noted that Quinnett and Shear fail to disclose or suggest the above-discussed features of claim 5.

As for claim 6, it is patentable over the references relied upon in the rejections for reasons similar to those set forth above in support of claim 5. That is, claim 6 recites features similar to those in claim 5, which are not disclosed or suggested in the references.

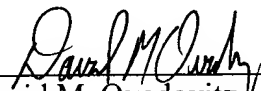
Because of the above-mentioned distinctions, it is believed clear that claims 1-13 are patentable over the references relied upon in the rejections. Furthermore, it is submitted that the distinctions are such that a person having ordinary skill in the art at the time of invention would not have been motivated to make any combination of the references of record in such a manner as to result in, or otherwise render obvious, the present invention as recited in claims 1-13. Therefore, it is submitted that claims 1-13 are clearly allowable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. The Examiner is invited to contact the undersigned by telephone if it is felt that there are issues remaining which must be resolved before allowance of the application.

Respectfully submitted,

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